Office Action Summary	Application No.	Applicant(s)	
	10/813,027	GINZBURG ET AL.	
	Examiner	Art Unit	
	Jianye Wu	2416	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *16 July 2009*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *44-81* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *44-81* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☒ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Response to Arguments

1. Applicant's arguments filed 7/16/09 have been fully considered, they are persuasive. Therefore, the finality of the rejection has been withdrawn. However, upon further consideration, a new ground of rejection is made.

2. The "…, digital or analog medium", [0014] of Specification, in defining the computer readable storage medium, is interpreted as digital or analog **storage material** for storing information.

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Claim Rejections - 35 USC § 103

3. The **following** is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

The factual inquiries set forth in Graham v. John Deere Co., 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

> 1. Determining the scope and contents of the prior art.
> 2. Ascertaining the differences between the prior art and the claims at issue.
> 3. Resolving the level of ordinary skill in the pertinent art.
> 4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

4. **Claims 44-58, 62, 64, 66, 68, 72-73** and **78-79** are rejected under 35

U.S.C. 103(a) as being unpatentable over Bing et al. (US, 20040131084 A1, hereinafter Bing) in view of Razavilar et al (US 20030181211 A1, hereinafter Razavilar).

As to **claim 44, 50, 53** and **56**, Bing discloses a method, a processor-readable storage medium, a wireless device and a processor for transmitting between a wireless device and a plurality of stations, comprising:

a channel divider to divide a frequency bandwidth of a channel ("downlink DL from the base station BS to the subscriber terminals MT1, MT2, MT3", [0037] in view of FIG. 1 and 9) into a plurality of Frequency sub-channels (OFDM, [0020], line 11; by definition Orthogonal Frequency Division Multiplexing, OFDM dividing frequency bandwidth of a channel into sub channels);

a transmitter to transmit a multicast ("a Multicast connection", [0037]) transmission to the plurality of stations over substantially the entire frequency bandwidth of the channel ("the downlink DL from the base station BS to the subscriber terminals MT1, MT2, MT3", [0037]; By definition, OFDM divides an entire spectrum of frequency into a plurality of frequency sub-channels and each of the sub-channels can be used for different mobile station, which is well known to a skilled in the art, e.g., Gupta et al US 20040165683 A1 reads "in OFDM systems, the **entire frequency** bandwidth used for the transmission of signals **is subdivided** into a plurality of frequency subcarriers"); and

a receiver to receive an acknowledgement signals (ACK or NAK, [0045] in view of FIG. 9) from said plurality of stations over said plurality of allocated frequency sub-channels.

Bing does not explicitly disclose an allocator to allocate said plurality of frequency sub-channels to the plurality of stations based on received signal strength of the stations;

In the same field of endeavor (wireless communication), Razavilar discloses communication device (e.g., "a given communication terminal", [0030]) selecting a channel from a plurality of channels based on received signal strength ("select, for communications, a channel from available channels based upon received signal strength", [0030]).

Therefore, it would have been obvious to a person of ordinary skill in the art at the time of the invention to combine Bing with Razavilar to add the system disclosed by Bing an allocator taught by Razavilar to allocate said plurality of frequency sub-channels to the plurality of stations based on received signal strength of the stations because they are analogous.

As to **claim 45, 51, 54** and **57**, Bing in view of Razavilar discloses claim 44, 50 and 53, Bing further discloses said transmitter is to retransmit said multicast transmission if an acknowledgment (ACKs, FIG. 9) of said multicast transmission is not received from all of the plurality of stations ("data packets were transmitted incorrectly and have to be transmitted again", [0046], line 3).

As to **claim 46**, **52**, **55** and **58**, Bing in view of Razavilar discloses claim 44, 50 and 53, Bing further discloses comprising:

A controller for assigning a group to at least one of the plurality of stations (a multicast is always associated with a group, for example, terminals MT1, MT2 and MT3

are in a group as shown in FIG. 9 and [0046]), and wherein said transmitter is for transmitting said group assignment to said at least one of said plurality of stations (FIG. 7 or 9 and [0046]).

As to **claim 47**, Bing in view of Razavilar discloses the method of Claim 46, wherein said assignment is based on a received signal strength of said at least one of the plurality of stations (FIG. 9 or "transmission quality about the transmission quality in the form of acknowledgements from the terminals MT1, MT2, MT3 is in turn sent back to the base station", [0046]).

As to **claim 48**, Bing in view of Razavilar discloses the method of Claim 46, wherein said assignment is based on a dynamic range (distance and location of MTs to BS as shown in FIG. 8 and [0046]) of a receiver of said at least one of the plurality of stations (FIG. 8 and 9).

As to **claim 49**, Bing in view of Razavilar discloses the method of Claim 44, wherein the allocating includes allocating to a station a sub-channel of the plurality of sub-channels based on a signal strength of received acknowledgement signal fro the station ("transmission quality about the transmission quality in the form of acknowledgements from the terminals MT1, MT2, MT3 is in turn sent back to the base station", [0046])

For **claims 62**, **64, 66, 68**, **72** and **78,** Bing discloses a method, a processor-readable storage medium, a wireless communication station and a processor for transmitting between a wireless communication station and a wireless communication device, comprising:

A controller to receive an allocation of frequency sub-channel from a plurality of frequency sub-channels within a frequency bandwidth of a channel (OFDM, [0020], line 11; by definition Orthogonal Frequency Division Multiplexing, OFDM dividing frequency bandwidth of a channel into sub channels), wherein said frequency sub-channel is allocated to the station based on a received signal strength of the station ("downlink DL from the base station BS to the subscriber terminals MT1, MT2, MT3", [0037] in view of FIG. 1 and 9);

a receiver to receive a multicast transmission from the wireless device over substantially the entire frequency bandwidth of the channel ("the downlink DL from the base station BS to the subscriber terminals MT1, MT2, MT3", [0037]; By definition, OFDM divides an entire spectrum of frequency into a plurality of frequency sub-channels and each of the sub-channels can be used for different mobile station, which is well known to a skilled in the art, e.g., Gupta et al US 20040165683 A1 reads "in OFDM systems, the **entire frequency** bandwidth used for the transmission of signals **is subdivided** into a plurality of frequency subcarriers") a frequency sub-channel ("bi-directional communication connection with an uplink UP from the subscriber terminals MT1, MT2, MT3 to the base station BS", [0037] and FIG. 9) and

a transmitter to transmit to the wireless device an acknowledgment over said allocated frequency sub-channel (ACKs, FIG. 9).

Bing does not explicitly disclose an allocator to allocate said plurality of frequency sub-channels are allocated to the plurality of stations based on received signal strength of the stations;

In the same field of endeavor (wireless communication), Razavilar discloses communication device (e.g., "a given communication terminal", [0030]) selecting a channel from a plurality of channels based on received signal strength ("select, for communications, a channel from available channels based upon received signal strength", [0030]).

Therefore, it would have been obvious to a person of ordinary skill in the art at the time of the invention to combine Bing with Razavilar to add the system disclosed by Bing an allocator taught by Razavilar to allocate said plurality of frequency sub-channels to the plurality of stations based on received signal strength of the stations because they are analogous.

As to **claim 73** and **79**, Bing in view of Razavilar discloses a method of claim 72 and a wireless device system of claim 78, respectively, wherein said transmitter of said wireless device is for **retransmitting** said multicast transmission if an acknowledgment of said multicast transmission is not received from all of said plurality of stations ("this **repeat transmission** can in principle also proceed in a Broadcast method according to FIG. 5 but can also proceed using a targeted manner based on the precise knowledge of which terminals have to receive which data packets again, as shown in FIG. 8", [0046]).

5. **Claims 59-61** and **70** are rejected under 35 U.S.C. 103(a) as being unpatentable over Bing in view of Razavilar and further in view of Kapoor et al (US 6795424, hereinafter Kapoor).

For **claim 59**, it is the wireless device of claim 53, further comprising a dipole antenna operably connected to said transmitter and said receiver. Bing in view of Razavilar discloses the wireless device of claim 53, but **is silent on** the dipole antenna.

In the same field of endeavor, Kapoor discloses using the dipole antenna ("two dipole antenna delements", Col. 17, line 34) connected to said transmitter and said receiver.

Therefore, it would have been obvious to a person of ordinary skill in the art at the time of the invention to modify Bing in view of Razavilar by Kapoor to connect a dipole antenna to said transmitter and said receiver of the wireless device in order to reduce cost (Kapoor Col. 17, line 40).

As to **claim 60**, Bing in view of Razavilar and Kapoor discloses the wireless device of Claim 59, Bing further discloses said transmitter is for retransmitting said multicast transmission if an acknowledgment of said multicast transmission is not received from all of said plurality of stations ([0046]).

As to **claim 61**, Bing in view of Razavilar and Kapoor discloses the wireless device of Claim 59, Bing further discloses an assignor for assigning a group to at least one of said plurality of stations, and wherein said transmitter is for transmitting said group assignment to said at least one of said plurality of stations (FIG. 8 and [0046]).

For **claim 70**, Bing discloses a station, comprising:

a controller (e.g., the controller of MT2, or BS) to receive an allocation of frequency sub-channel from a plurality of frequency sub-channels within a frequency

bandwidth of a channel (OFDM, [0020], line 11; by definition Orthogonal Frequency Division Multiplexing, OFDM dividing frequency bandwidth of a channel into sub channels), wherein said frequency sub-channel is allocated to the station based on a received signal strength of the station ("downlink DL from the base station BS to the subscriber terminals MT1, MT2, MT3", [0037] in view of FIG. 1 and 9);

a receiver to receive a multicast transmission from the wireless device over substantially the entire frequency bandwidth of the channel ("the downlink DL from the base station BS to the subscriber terminals MT1, MT2, MT3", [0037]; By definition, OFDM divides an entire spectrum of frequency into a plurality of frequency sub-channels and each of the sub-channels can be used for different mobile station, which is well known to a skilled in the art, e.g., Gupta et al US 20040165683 A1 reads "in OFDM systems, the **entire frequency** bandwidth used for the transmission of signals **is subdivided** into a plurality of frequency subcarriers") a frequency sub-channel ("bi-directional communication connection with an uplink UP from the subscriber terminals MT1, MT2, MT3 to the base station BS", [0037] and FIG. 9) and

a transmitter to transmit to the wireless device an acknowledgment over said signal over said allocated frequency sub-channel (ACKs, FIG. 9).

Bing does not explicitly disclose an allocator to allocate said plurality of frequency sub-channels are allocated to the plurality of stations based on received signal strength of the stations, and is silent on a dipole antenna operably connected to said transmitter and said receiver.

In the same field of endeavor (wireless communication), Razavilar discloses communication device (e.g., "a given communication terminal", [0030]) selecting a channel from a plurality of channels based on received signal strength ("select, for communications, a channel from available channels based upon received signal strength", [0030]).

Therefore, it would have been obvious to a person of ordinary skill in the art at the time of the invention to combine Bing with Razavilar to add the system disclosed by Bing an allocator taught by Razavilar to allocate said plurality of frequency sub-channels to the plurality of stations based on received signal strength of the stations because they are analogous.

Bing in view of Razavilar is silent on a dipole antenna operably connected to said transmitter and said receiver.

In the same field of endeavor, Kapoor discloses using the dipole antenna ("two dipole antenna elements", Col. 17, line 34) connected to said transmitter and said receiver.

Therefore, it would have been obvious to a person of ordinary skill in the art at the time of the invention to modify Bing in view of Razavilar by Kapoor to use the dipole antenna to said transmitter and said receiver of the wireless device in order to reduce cost (Kapoor Col. 17, line 40).

6. **Claims 63**, **65, 67, 69** and **81**, are rejected under 35 U.S.C. 103(a) as being unpatentable over Bing in view of Razavilar, further in view of Hayashi

et al (US 20030147392 A1, hereinafter Hayashi).

As to **claims 63**, **65, 67, 69** and **81**, Bing in view of Razavilar discloses claims 62, 64, 66, 68 and 78, but does not explicitly disclose requestor for requesting membership in a group comprising at least one station; and wherein said transmitter is for transmitting said group membership request to the wireless device.

In the same field of endeavor (communication multicasting), Hayashi the each station transmits a request for the group membership ("each one of the one or more client hosts includes request means for transmitting a multicast control packet for requesting joining or leaving a multicast group", claim 1).

Therefore, it would have been obvious to a person of ordinary skill in the art at the time of the invention to combine Bing in view of Razavilar with Hayashi to include a requestor for requesting membership in a group and said transmitter is for transmitting said group membership request to the wireless device in order to achieve the desired requirements.

7. **Claim 71**, are rejected under 35 U.S.C. 103(a) as being unpatentable over Bing in view Razavilar and Kapoor, further in view of Hayashi et al (US 20030147392 A1, hereinafter Hayashi).

As to **claim 71**, Bing in view of Razavilar and Kapoor discloses claims 70, but does not explicitly disclose requestor for requesting membership in a group comprising at least one station; and wherein said transmitter is for transmitting said group membership request to the wireless device.

In the same field of endeavor (communication multicasting), Hayashi the each station transmits a request for the group membership ("each one of the one or more client hosts includes request means for transmitting a multicast control packet for requesting joining or leaving a multicast group", claim 1).

Therefore, it would have been obvious to a person of ordinary skill in the art at the time of the invention to combine Bing in view of Razavilar and Kapoor with Hayashi to include a requestor for requesting membership in a group and said transmitter is for transmitting said group membership request to the wireless device in order to achieve the desired requirements.

8. **Claims 74-77** and **80** are rejected under 35 U.S.C. 103(a) as being unpatentable over Bing in view of Razavilar, further in view of Senga et al (US 20020065928 A1, hereinafter Senga).

As to **claim 74** and **80**, Bing in view of Razavilar discloses claim 72 and 78, wherein said wireless device further comprises an assignor (suggested by means for assigning the multicast group comprising MT1, MT2 and MT3 as shown in FIG. 7) for assigning a group to at least one of said plurality of stations (MT2, MT2 and MT3, [0046], line 7-12);

Bing in view of Razavilar does not explicitly disclose said transmitter is for transmitting said group assignment to said at least one of said plurality of stations

In the same field of endeavor (communication multicasting), Senga discloses said transmitter is for transmitting said group assignment to said at least one of said

plurality of stations ("the host conference terminal capable of issuing a request for division into groups is assigned to a terminal 100-1, and a conference terminal 100-3 selects stream data to be received according to the division request", [0068]).

Therefore, it would have been obvious to a person of ordinary skill in the art at the time of the invention to combine Bing with Senga to transmit said group assignment to said at least one of said plurality of stations to achieve the desired requirements.

As to **claim 75**, Bing in view of Razavilar and Senga discloses the method of claim 74, Bing further discloses said assignment is based on a received signal strength (transmission quality, [0046]) of said at least one of the plurality of stations.

As to **claim 76**, Bing in view of Razavilar and Senga discloses the method of claim 74, Bing further discloses said assignment is based on a dynamic range (distance and location of MTs to BS as shown in FIG. 8 and [0046]) of a receiver of said at least one of the plurality of stations.

As to **claim 77**, Bing in view of Razavilar and Senga discloses the method of Claim 74, Bing further discloses said transmitting of said multicast transmission by the wireless device is to all stations assigned to said group (multicast, [0037], last 2 lines).

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jianye Wu whose telephone number is (571)270-1665. The examiner can normally be reached on Monday to Thursday, 8am to 7pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Seema Rao can be reached on (571)272-3174. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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